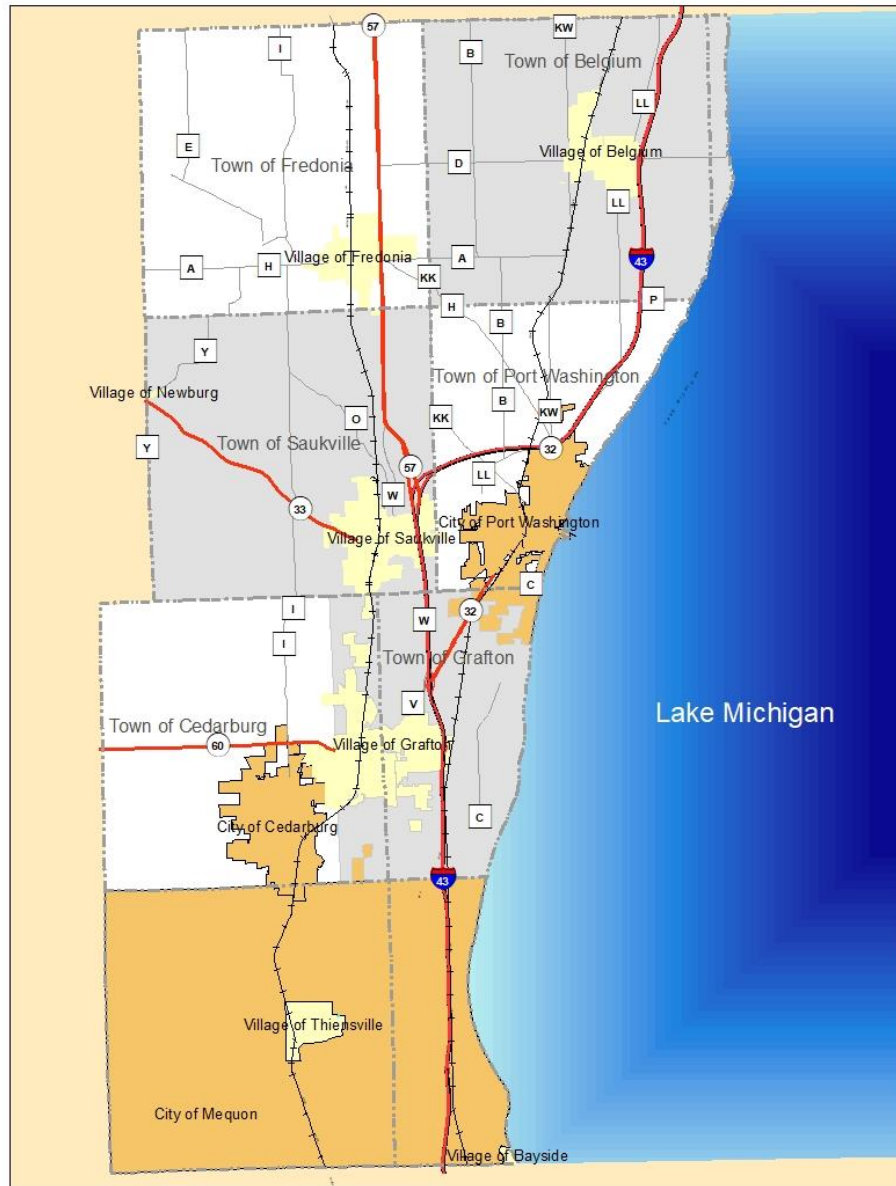


Ozaukee County

Land Information Plan

2022-2024



Wisconsin Land Information Program
Wisconsin Department of Administration
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Madison, WI 53703
(608) 267-3369
www.doa.wi.gov/WLIP

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EXECUTIVE SUMMARY

About this Document. This document is a land information plan for Ozaukee County prepared by the land information officer (LIO) and the Ozaukee County land information council. Under state statute 59.72(3)(b), a “**countywide plan for land records modernization**” is required for participation in the Wisconsin Land Information Program (WLIP). The purpose of this document is twofold: 1) to meet WLIP funding eligibility requirements necessary for receiving grants and retaining fees for land information, and 2) to plan for county land records modernization in order to improve the efficiency of government and provide improved government services to businesses and county residents.

WLIP Background. The WLIP, administered by the Wisconsin Department of Administration, is funded by document recording fees collected by register of deeds at the county-level. In 2020, Ozaukee County was awarded \$41,000 in WLIP grants and retained a total of \$170,928 in local register of deeds document recording fees for land information.

This plan lays out how funds from grants and retained fees will be prioritized. However, as county budgets are determined on an annual basis with county board approval, this plan provides estimated figures that are subject to change and are designed to serve planning purposes only.

Land Information in Ozaukee County. Land information is central to county operations, as many essential services rely on accurate and up-to-date geospatial data and land records. A countywide land information system supports economic development, emergency planning and response, and a host of other citizen services. The Ozaukee County land information system integrates and enables efficient access to information that describes the physical characteristics of land, as well as the property boundaries and rights attributable to landowners.

Mission of the Land Information Office. In the next three years, Ozaukee County’s Land Information Office strives to be recognized for its exceptional web mapping site, gains in governmental efficiencies by broadening the utilization of GIS, improvements in parcel mapping accuracy, and responsiveness to meeting the land records needs of residents and businesses.

Land Information Office Projects. To realize this mission, in the next three years, the county land information office will focus on the following projects:

1. Maintain Searchable format
2. Provide training and education to keep abreast of changing and improving technology
3. Continued development, implementation and maintenance of Land Records System including document track indexing, document imaging and tax assessment data improvements and integration.
4. Participate in the 2022 SEWRPC Orthophotography Acquisition for Countywide 3” resolution orthophotography.
5. Web based application enhancements and hosting for improved access to land records.
6. Assist with the development of data for NG-911 Emergency Response implementation.

The remainder of this document provides more details on Ozaukee County and the WLIP, summarizes current and future land information projects, and reviews the county’s status in completion and maintenance of the map data layers known as Foundational Elements.

1 INTRODUCTION

In 1989, a public funding mechanism was created whereby a portion of county register of deeds document recording fees collected from real estate transactions would be devoted to land information through a new program called the Wisconsin Land Information Program (WLIP). The purpose of the land information plan is to meet WLIP requirements and aid in county planning for land records modernization.

The WLIP and the Land Information Plan Requirement

In order to participate in the WLIP, counties must meet certain requirements:

- Update the county's land information plan at least every three years
- Meet with the county land information council to review expenditures, policies, and priorities of the land information office at least once per year
- Report on expenditure activities each year
- Submit detailed applications for WLIP grants
- Complete the annual WLIP survey
- Subscribe to DOA's land information listserv
- Coordinate the sharing of parcel/tax roll data with the Department of Administration in a searchable format determined by DOA under s. 59.72(2)(a)

LAND INFORMATION

Any physical, legal, economic or environmental information or characteristics concerning land, water, groundwater, subsurface resources or air in this state.

'Land information' includes information relating to topography, soil, soil erosion, geology, minerals, vegetation, land cover, wildlife, associated natural resources, land ownership, land use, land use controls and restrictions, jurisdictional boundaries, tax assessment, land value, land survey records and references, geodetic control networks, aerial photographs, maps, planimetric data, remote sensing data, historic and prehistoric sites and economic projections.

– Wis. Stats. section 59.72(1)(a)

Any grants received and fees retained for land information through the WLIP must be spent consistent with the county land information plan.

Act 20 and the Statewide Parcel Map Initiative

A major development for the WLIP occurred in 2013 through the state budget bill, known as Act 20. It directed the Department of Administration (DOA) to create a statewide digital parcel map in coordination with counties.

Act 20 also provided more revenue for WLIP grants, specifically for the improvement of local parcel datasets. The WLIP is dedicated to helping counties meet the goals of Act 20 and has made funding available to counties in the form of Strategic Initiative grants to be prioritized for the purposes of parcel/tax roll dataset improvement.

For Strategic Initiative grant eligibility, counties are required to apply WLIP funding toward achieving certain statewide objectives, specified in the form of "benchmarks." Benchmarks for parcel data—standards or achievement levels on data quality or completeness—were determined through a participatory planning process. Current benchmarks are detailed in the [WLIP grant application](#), as will be future benchmarks.

WLIP Benchmarks (For 2016-2021 Grant Years)

- Benchmark 1 & 2 – Parcel and Zoning Data Submission/Extended Parcel Attribute Set Submission
- Benchmark 3 – Completion of County Parcel Fabric
- Benchmark 4 – Completion and Integration of PLSS

More information on how Ozaukee County is meeting these benchmarks appears in the Foundational

Elements section of this plan document.

County Land Information System History and Context

In February 1990 The Ozaukee County Board of Supervisors created a Land Information Office pursuant to Section 59.88 of the Wisconsin State Statutes. To provide policy oversight, the Board also created a Land Information Committee comprised of County Board Supervisors. In June 1991, the Board requested the Southeastern Wisconsin Regional Planning Commission (SEWRPC) to prepare a 5-year plan for the implementation of a modernization program. SEWRPC produced Community Assistance Planning Report #142, A Land Information System Plan for Ozaukee County. Subsequently, the plan was approved by the Board in May 1992.

The modernization program proposed by the plan involved the development of a fundamental base map upon which a computerized Geographic Information System (GIS) could be built. Developing this map to WLIP Standards required the following activities:

- Recovery/Monumentation, where necessary, of all United States Public Land Survey (USPLS) section corners and quarter corners.
- Establish state plane coordinates on all USPLS corners and quarter corners
- Establish vertical elevations on all USPLS corners and quarter corners.
- Acquire digital topographic and planimetric mapping at Federal Geodetic Data Committee (FGDC) standards with 1' contours for the entire county.

Since then, additional data and projects have been completed to modernize the Land information in Ozaukee County. Additional data layers and the approximate date of completion are as follows:

- Digital Parcel Maps 1985-2006
- Platted Lands 2008
- Address and Road Centerline 2010, 2020
- Digital Soils maps 1970
- Contour Maps 2-foot 1994, 1-foot 2015
- Orthophotography 1995, 2000, 2005, 2007, 2010, 2015, 2020
- LIDAR and elevation data 2015
- Flood Plain Mapping 2007
- Supervisory Districts 2010
- Plats of Survey 2017
- Shoreland Zoning 2008
- Computer Aided Dispatch datasets, emergency service zone, responder locations, etc. 2010
- Converted to newer datum NAD27 to NAD83 2018
- Developed and/or enhanced GIS website 2006, 2009, 2012, 2019, 2020, 2021
- Document Imaging of Register of Deeds documents 2006 and 2021
- Updated tax package and developed public Access website 2010

County Land Information Plan Process

County land information plans were initially updated every five years. However, as a result of Act 20, counties must update and submit their plans to DOA for approval every three years. The 2022-2024 plan, completed at the end of 2021, is the third post-Act 20 required update.

County Land Information Plan Timeline

- DOA release of finalized instructions by March 31, 2021.
- April–September 2021: Counties work on land info plans.
- Draft plans due to DOA by September 30, 2021 (but sooner is advised).
- Final plans with county land info council approval due by December 31st, 2021.

Plan Participants and Contact Information

Another requirement for participation in the WLIP is the county land information council, established by legislation in 2010. The council is tasked with reviewing the priorities, needs, policies, and expenditures of a land information office and advising the county on matters affecting that office.

According to s. 59.72(3m), Wis. Stats., the county land information council is to include:

- Register of Deeds
- Treasurer
- Real Property Lister or designee
- Member of the county board
- Representative of the land information office
- A realtor or member of the Realtors Association employed within the county
- A public safety or emergency communications representative employed within the county
- County surveyor or a registered professional land surveyor employed within the county
- Other members of the board or public that the board designates

The land information council must have a role in the development of the county land information plan, and DOA requires county land information councils to approve final plans.

This plan was prepared by the county LIO, the Ozaukee County Land Information Council, and others as listed below.

Ozaukee County Land Information Council and Plan Workgroup				
Name	Title	Affiliation	Email	Phone
Ronald Voigt	Register of Deeds,	Ozaukee County Register of Deeds Office	Rvoigt@co.Ozaukee.wi.us	262-284-8261
Joshua Morrison	County Treasurer	Ozaukee County Treasurer's Office	Jmorrison@co.Ozaukee.wi.us	608-333-1234
Amy Wiebe	Real Property Lister	Ozaukee County Register of Deeds Office	Awiebe@co.ozaukee.wi.us	608-284-8264
Vacant	County Board Member	TBD		
Cristina Richards	Land Information Office Representative	Ozaukee County Land Information Office	cpearson@co.ozaukee.wi.us	262-284-8262
Michael Didier	Realtor	ReMax – Port Washington	Mike@mikedidier.com	262-284-2000
Joseph Laurin	Dispatch Supervisor	Ozaukee County Sheriff's Department	jlaurin@co.ozaukee.wi.us	262-284-7172
Robert Merry	County Surveyor	SEWRPC	rmerry@sewrpc.org	262-953-4289
Robert Kaslick	Deputy Director	Ozaukee County Emergency Management	Rkaslick@co.ozaukee.wi.us	262-284-8397

2 FOUNDATIONAL ELEMENTS

Counties must have a land information plan that addresses development of specific datasets or map layer groupings historically referred to as the WLIP Foundational Elements. Foundational Elements incorporate nationally-recognized “Framework Data” elements, the major map data themes that serve as the backbone required to conduct most mapping and geospatial analysis.

In the past, Foundational Elements were selected by the former Wisconsin Land Information Board under the guiding idea that program success is dependent upon a focus for program activities. Thus, this plan places priority on certain elements, which must be addressed in order for a county land information plan to be approved. Beyond the county’s use for planning purposes, Foundational Element information is of value to state agencies and the WLIP to understand progress in completion and maintenance of these key map data layers.

FOUNDATIONAL ELEMENTS

- PLSS
- Parcel Mapping
- LiDAR and Other Elevation Data
- Orthoimagery
- Address Points and Street Centerlines
- Land Use
- Zoning
- Administrative Boundaries
- Other Layers

PLSS

Public Land Survey System Monuments

Layer Status

PLSS Layer Status

	Status/Comments
Number of PLSS corners (selection, ¼, meander) set in original government survey that can be remonumented in your county	<ul style="list-style-type: none"> 872 (1,172 if one would include center of section, closing corners on quarter-section lines, and meander corners on quarter-section lines which are not part of the original government survey)
Number of PLSS corners capable of being remonumented in your county that have been remonumented	<ul style="list-style-type: none"> 872 100%
Number of remonumented PLSS corners with survey grade coordinates (see below for definition) <ul style="list-style-type: none"> SURVEY GRADE – coordinates collected under the direction of a Professional Land Surveyor, in a coordinate system allowed by 236.18(2), and obtained by means, methods and equipment capable of repeatable 2 centimeter or better precision SUB-METER – point precision of 1 meter or better APPROXIMATE – point precision within 5 meters or coordinates derived from public records or other relevant information 	<ul style="list-style-type: none"> 872 100% Survey Grade 1,172, 100% of all monumented corners original or not, all have established survey grade coordinates
Number of survey grade PLSS corner coordinates integrated into county digital parcel layer	<ul style="list-style-type: none"> 1,172 100%
Number of non-survey grade PLSS corner coordinates integrated into county digital parcel layer	<ul style="list-style-type: none"> 0
Tie sheets available online?	<ul style="list-style-type: none"> Yes, NAD83/2011 with also NAD27 - https://maps.sco.wisc.edu/surveycontrolfinder/#7/44.730/-90.143/NGS,county,USGS,CORS/terrain Yes, NAD27 only - http://maps.sewrpc.org/regionallandinfo/survey.shtm Yes, NAD27 only – https://ozaukeeco.ags.ruekert-mielke.com/
Percentage of remonumented PLSS corners that have tie sheets available online (whether or not they have corresponding coordinate values)	<ul style="list-style-type: none"> 100%
Percentage of remonumented PLSS corners that have tie sheets available online (whether or not they have corresponding coordinate values) and a corresponding URL path/hyperlink value in the PLSS geodatabase	<ul style="list-style-type: none"> 100%
PLSS corners believed to be remonumented based on filed tie-sheets or surveys, but do not have coordinate values	<ul style="list-style-type: none"> 0
Approximate number of PLSS corners believed to be lost or obliterated	<ul style="list-style-type: none"> 0
Which system(s) for corner point identification/numbering does the county employ (e.g., the Romportl point numbering system known as Wisconsin Corner Point Identification System, the BLM Point ID Standard, or other corner point ID system)?	<ul style="list-style-type: none"> Corner identification is as follows: <ul style="list-style-type: none"> XXYYZZZ0 XX – Township YY – Range ZZZ0 – There are a possible 169 corners within a typical township with the Northeast corner of Section 1 being 0010 with the SW of 31 which could be again be 0010 (NE of Section 1) or if outside of the Region the number be 1690. The forth digit "0" would allocate if there are witness/meander corners. If there are witness/meander corners the value of 1 would be for the witness/meander corner that is to the north of the actual corner location, 2 would be to the east, 3 would to the south, and 4 to the west. USPLSS corners from adjacent range lines would number from the east line of the western Township. If common corners found from adjacent Townships would number from the north line of the southern Township.
Does the county contain any non-PLSS areas (e.g., river frontage long lots, French land claims, private claims, farm lots, French long lots, etc.) or any special situations	<ul style="list-style-type: none"> No

regarding PLSS data for tribal lands?	
Total number of PLSS corners along each bordering county	<ul style="list-style-type: none"> • Milwaukee – 19; Washington – 55; and County outside Region; Sheboygan – 47
Number of PLSS corners remonumented along each county boundary	<ul style="list-style-type: none"> • Milwaukee – 19, (100%); Washington – 55, (100%); and County outside Region; Sheboygan – 47, (100%)
Number of remonumented PLSS corners along each county boundary with survey grade coordinates	<ul style="list-style-type: none"> • Milwaukee – 19, (100%); Washington – 55, (100%); and County outside Region; Sheboygan – 47, (100%)
In what ways does your county collaborate with or plan to collaborate with neighboring counties for PLSS updates on shared county borders?	<ul style="list-style-type: none"> • All USPLSS corners in the SE Region (Kenosha, Milwaukee, Ozaukee, Walworth, Washington, and Waukesha) are shared and supported from one site. The neighboring County of Sheboygan share corner location evidence to assist with the corner perpetuation, however, the corner coordinates are based on differing datums.

Custodian

- Ozaukee County Highway Department and SEWRPC (in role as County Surveyor)

Maintenance

- Ozaukee County also contracts with the SEWRPC to provide yearly maintenance to the survey control system. This includes identifying monuments that may be disturbed during upcoming construction and insuring that all survey ties are correct and current. In addition, SEWRPC responds to notification from other surveyors regarding missing or damaged monuments which are then researched and replaced.

Standards

- Statutory Standards for PLSS Corner Remonumentation
 - s. 59.74, Wis. Stats. Perpetuation of section corners, landmarks.
 - s. 60.84, Wis. Stats. Monuments.
 - ch. A-E 7.08, Wis. Admin. Code, U.S. public land survey monument record.
 - ch. A-E 7.06, Wis. Admin. Code, Measurements.
 - s. 236.15, Wis. Stats. Surveying requirement.
- SURVEY GRADE standard from Wisconsin County Surveyor's Association:
 - **SURVEY GRADE** – coordinates collected under the direction of a Professional Land Surveyor, in a coordinate system allowed by 236.18(2), and obtained by means, methods and equipment capable of repeatable 2 centimeter or better precision
 - **SUB-METER** – point precision of 1 meter or better
 - **APPROXIMATE** – point precision within 5 meters or coordinates derived from public records or other relevant information
- Ozaukee County's PLSS corner coordinates were established using the guidelines and specifications from the National Geodetic Survey for Third Order Class I accuracy. The county uses the State Plane Coordinate System (SPCS) Wisconsin South Zone and the datum referenced is the North American Datum of 1927 (NAD27) and vertically the National Geodetic Vertical Datum of 1929 (NGVD29). In cooperation with the rest of the SEWRPC region, the county completed a horizontal migration to modernize the system to the North American Datum of 1983 with the national readjustment of 2011 (NAD83/2011) and has migrated vertically to the North American Vertical Datum of 1988 (2012) (NAVD88)

Other Geodetic Control and Control Networks

e.g., HARN, Height Mod., etc.

Layer Status

- Ozaukee County does not have other geodetic control networks information

Parcel Mapping

Parcel Geometries

Layer Status

- The Ozaukee County Parcel Layer is 100% complete, utilizing a geodatabase format
- **Projection and coordinate system:** The parcel maps are reference to the Wisconsin State Plan Coordinate System (South Zone) which is mathematically relatable to the North American Datum (NAD) 1983. The coordinated system was updated in 2018 from NAD27.
- **Integration of tax data with parcel polygons:** The Ozaukee County Parcel Polygon dataset is linked to the County Tax Assessment role using the Parcel Identification (Tax key) number. There are no other attributes included in the parcel polygons.
- **Environmental Systems Research Institute (ESRI) Parcel Fabric/LGIM Data Model:** At this time there are no plans to implement the ESRI parcel fabric data model but as technology changes Ozaukee County would consider implementing the data model.
- **Unique URL path for each parcel record:** The county does have a unique path for each parcel record but utilizing the parcel number as part of the URL path in both the Tax Assessment roll public access (Ascent) and the County GIS Website. The data available via this unique URL is consistent with the data available from the tax assessment roll. It appears to be very stable the majority of the time. We do not have a means in which to export the data at this time.
- **Online Parcel Viewer Software/App and Vendor name:** Our GIS website was developed by Symbiont and County staff, utilizing ESRI ArcGIS Online.

Custodian

- Ozaukee County Land Information Office

Maintenance

- **Update Frequency/Cycle.** Parcel polygons are updated daily as deeds are recorded at the Register of Deeds Office and quality control efforts continue.

Standards

- **Data Dictionary:** The data fields linked to the parcel ID number have a glossary available for determining field headings. This dataset does not adhere to any standard that we know of as it was developed with the software used to keep the record.

Assessment/Tax Roll Data

Layer Status

- **Progress toward completion/maintenance phase:** NA
- **Tax Roll Software/App and Vendor name:** Ascent Land Records Suite
- **Municipal Notes:** NA

Custodian

- Ozaukee County Treasurer's Office

Maintenance

- **Maintenance of the Searchable Format standard:** To maintain the Searchable Format standard, the county will continue to export data from the County's Land Records System and complete adjustments as needed. Staff will continue to research modifying data in the LRS system to reduce the amount of adjustments to the final export.
- **Searchable Format Workflow:** The County maintains parcel/tax roll data in the Searchable Format or close enough to the Searchable Format that little to no human labor is required for the annual submission of parcel/tax roll data to DOA.

Standards

- Wisconsin Department of Revenue [Property Assessment Manual](#) and attendant DOR standards
- DOR XML format standard requested by DOR for assessment/tax roll data

- Ozaukee County intends to supply the required data prior to the due date required.

Non-Assessment/Tax Information Tied to Parcels

Layer Status

- Ozaukee County does not have Non-Assessment/Tax Information ties to parcels

ROD Real Estate Document Indexing and Imaging

Layer Status

- **Grantor/Grantee Index:** Digital index begins with 1972 and has parcel numbers from August 1981. All platted documents (CSM, Subdivisions and Condos) are complete in the digital index.
- **Tract Index:** Digital from August 1981 to the parcel level (PIN). PLSS is also include since August 2010 but few will use this index since it is more refined with the PIN. Anything and everything is included in the index if it is a real estate record.
- **Imaging:** Ozaukee County also utilizes the services of Fidlar Technologies. Fidlar provides this Register of Deeds with its document management system with the following products
 - Avid Land Records Management Software (Latest Version being 4.2.94)
 - Laredo Land Records Document Search Engine
 - Tapestry Land Records via the Internet
 - Monarch Secure, Automated, Dynamic, Data & Image Service
 - Replication Protect, Secure, Recover, Your Public Record
 - Property Fraud Alert Protect Their Most Valuable Investment
 - Official Records Online Provide Certified Records Online
 - Imaging Services Document Scanning and Archiving Services
 - Anchor Define, Manage, and Validate Legal Parameters
 - Iris Standardize, Normalize, Regulate
- **ROD Software/App and Vendor Name:** Laredo/Tapestry – from contractor/vendor Fidlar

Custodian

- Ozaukee County Register of Deeds

Maintenance

- Ozaukee County Register of Deeds

Standards

- s. 59.43, Wis. Stats. Register of deeds; duties, fees, deputies.
- Ch. 706, Wis. Stats. Conveyances of real property; Recording; Titles.

LiDAR and Other Elevation Data

LiDAR

Layer Status

- **Most recent acquisition year:** 2015
- **Accuracy:** The RMSEz was computed to be 0.041 meters (0.135 feet) and AccuracyZ to be 0.080 meters (0.264 feet). RMSEz has been tested to 0.5 feet or better per the task order specifications. AccuracyZ has been tested to meet 18.13 cm Fundamental Vertical Accuracy at 95 Percent confidence level using RMSE(z) x 1.9600 as defined by the National Standards for Spatial Data Accuracy (NSSDA); assessed and reported using National Digital Elevation Program (NDEP)/ASRPS Guidelines.
- **Post spacing:** USGS QL2 Specifications – 0.71 meter and greater than or equal to 2 points per meter square.
- **Contractor's standard, etc.:** United State Geological Survey (USGS) – LiDAR Base Specifications, Version 1.2
- **Next planned acquisition year:** TBD

Custodian

- Ozaukee County Land Information Office

Maintenance

- None required as the LiDAR data set is static.

Standards

- United State Geological Survey (USGS) – LiDAR Base Specifications, Version1.2.

LiDAR Derivatives

Layer Status

- Horizontal Datum: NAD27 and NAD83/2011, Wisconsin State Plane Coordinates, South Zone, US Survey Feet;
- Vertical Datum: NGVD29 and NAVD88, US Survey
- Classified LAS Tiles: 10,000ft x 10,000ft tiles - See USGS LiDAR Base Specifications for technical approach for LAS version, file headers, and classification schema.
- Breaklines: One geodatabase containing all breaklines supporting USGS LiDAR Base Specifications (100ft or wider for river/streams and 2acres or greater for lakes and ponds)
- Digital Terrain Model DTM and hydro-enforced breaklines were used to generate contour lines of vertical interval of one-foot. Every fifth contour is noted as an index contour. DTM and contour vector files were delivered using an ESRI File Geodatabase format.
- Bare-Earth Surface (Raster Digital Elevation Model): 2ft hydro-flattened DEM using the same tiling scheme as above.
- FGDC Compliant metadata files for each of the derivative services.

Custodian

- Ozaukee County Land Information Office

Maintenance

- None required as the LiDAR data set is static.

Standards

- United State Geological Survey (USGS) – LiDAR Base Specifications, Version1.2.

Contours

Layer Status

- 1994 2' Contour Data – Vendor – Kapur and Associates
- 2015 1' contour Data – Vendor – Quantum Spatial

Custodian

- Ozaukee County Land Information Office

Maintenance

- Ozaukee County Land Information Office purchase the Contour deliverables at the next LIDAR Acquisition project

Standards

- All map products will meet ASPRS Class II accuracy standards.

Orthoimagery

Orthoimagery

Layer Status

- **Most recent acquisition year:** 2020
- **Resolution:** 3 inch
- **Contractor's standard:** Wisconsin Regional Orthoimagery Consortium (WROC) standard
- **Next planned acquisition year:** 2022 - 3" resolution product

Custodian

- Ozaukee County Land Information Office

Maintenance

- Ozaukee County Land Information Office will assist in determining the vendor as well as selecting at the specifications of the data as the acquisition process continues. Ozaukee County will also verify the accuracy and clarity through quality assurance measures.

Standards

- The aerial imagery to support digital orthoimagery meeting American Society for Photogrammetry and Remote Sensing (ASPRS) Class II standards for the appropriate mapping scale. Collect control for the project using Inertial Measurement Unit (IMU), Airborne Global Positioning System (ABGPS), and ground-based GPS technology

Historic Orthoimagery

Layer Status

- Ozaukee County has multiple years of historical Orthophotography imagery: 1941, 1950, 1963, 1970, 1980, 1990, 1995, 2000, 2005, 2007 and 2010. Ozaukee County has made the historical imagery available on the County GIS Website.

Custodian

- Ozaukee County Land Information Office

Maintenance

- Ozaukee County Land Information Office will be overseeing the conversion of the historical imagery to the NAD83 coordinate system

Standards

- The aerial imagery to support digital orthoimagery meeting American Society for Photogrammetry and Remote Sensing (ASPRS) Class II standards for the appropriate mapping scale. Collect control for the project using Inertial Measurement Unit (IMU), Airborne Global Positioning System (ABGPS), and ground-based GPS technology

Other Types of Imagery

Layer Status

- Ozaukee does not have any other types of imagery

Address Points and Street Centerlines

Address Point Data

Layer Status

- The Land Information Office will continuously maintain point addresses based on imaged roadways and other available information to support emergency response applications, wireless 911 and routing applications. In 2018 Ozaukee County began preparing data for NG911 by developing data to meet the Wisconsin NG911 GIS Data Standard. This is an ongoing project.

Custodian

- Ozaukee County Sheriff's Department

Maintenance

- Ozaukee County Land Information Office will maintain the address point data as notifications of new, incorrect or changed addresses are received from the local municipalities, County departments or other sources.
- Ozaukee County Land Information Office will comply with any changes necessary as it related to Next Generation 911 (NG911) including modifying data to meet address standards proposed by the WLIP.

Standards

- The address points are located utilizing the orthophotography and placed at the end of the driveway in rural areas. If a shared driveway exists, the address point is placed where the driveways split towards the parcels. In urban areas, the address point is placed on the street the house is facing. Address points are also based off actual addresses submitted by the local municipalities for more accurate location with 9-1-1 systems. Ozaukee County will adopt any address point standard approved by the WLIP due to NG911

Building Footprints

Layer Status

- Ozaukee County has a building footprint dataset, which has not been updated in a number of years. With the acquisition of LIDAR in 2015, the Land Information Office intends to update this dataset in the future.

Custodian

- Ozaukee County Land Information Office

Maintenance

- Ozaukee County Land Information Office will derive the building footprints as time allows by utilizing the LIDAR data

Standards

- The building footprints were located utilizing orthophotography. It is a goal to be able to generate current building footprints by utilizing accuracy the 2015 LIDAR.

Address Ranges

Layer Status

- The County centerline file will maintain address ranges as an attribute of the road centerline data based on imaged roadways and other available information to support emergency response applications, wireless 911 and routing applications.

Custodian

- Ozaukee County Sheriff's Department

Maintenance

- Ozaukee County Land Information Office will maintain the address point data as notifications of new, incorrect or changed address ranges are received from the local municipalities, County departments or other sources.
- Ozaukee County Land Information Office will comply with any changes necessary as it related to Next Generation 911(NG911) including modifying data to meet address standards proposed by the WLIP.

Standards

- Address ranges are based off actual addresses submitted by the local municipalities for more accurate location with 9-1-1 systems. Ozaukee County will adopt any standard approved by the WLIP due to NG911

Street Centerlines

Layer Status

- The County plans to maintain the dataset. The County complies with the GIS geodatabase design as the standard for mapping centerlines. The Land Information Office shares the responsibility to create, update and maintain the MSAG with the 911 Coordinator in the Sheriff's Office to ensure consistency and integration and plans to continue that relationship. We adhere to our 911 provider for data standards.

Custodian

- Ozaukee County Sheriff's Department

Maintenance

- Ozaukee County Land Information Office will maintain the road centerline data as notifications of new, incorrect or changed street centerlines are received from the local municipalities, County departments or other sources.
- Ozaukee County Land Information Office will comply with any changes necessary as it related to Next Generation 911(NG911) including modifying data to meet road centerline standards proposed by the WLIP.

Standards

- Street centerlines are maintained utilizing plats, CSM's and orthophotography when possible. Ozaukee County will adopt any standard approved by the WLIP due to NG911.

Rights of Way

Layer Status

- The approximate right-of-way of public roads is part of the parcel mapping process, particularly in platted lands. We have begun to develop a more accurate, all-encompassing road right-of-way data layers and currently are about 70% complete.

Custodian

- Ozaukee County Land Information Office

Maintenance

- Ozaukee County Land Information Office

Standards

- Right of ways are maintained utilizing survey records, plats, CSM's, legal descriptions, WISLR or by the default assumption of 66'.

Trails

Layer Status

- The County will continue to maintain bicycle, pedestrian, snowmobile, and other major named trails (Ozaukee Interurban Trail) layer in our geodatabase.

Custodian

- Ozaukee County Planning and Parks

Maintenance

- Ozaukee County Land Information Office will maintain the road centerline data as notifications of new, incorrect or changed trails are received from the local municipalities, County departments or other sources.
-

Standards

- Maintained by recorded documents, records and orthophotography

Land Use

Current Land Use

Layer Status

- The County utilizes a land use map developed by the SWERPC. The County is planning to establish a regular maintenance schedule of every 5 years. It was updated in 2007 as part of the Multi-jurisdictional Comprehensive Plan for Ozaukee County.

Custodian

- Local Towns, Villages, Cities and Southeast Wisconsin Regional Planning Commission

Maintenance

- Ozaukee County Planning and Parks

Standards

- s. 66.1001, Wis. Stats. Comprehensive planning. Land use maps are created locally through a community's comprehensive planning process. Land use mapping for the county is a patchwork of maps from comprehensive plans adopted by municipalities and the county

Future Land Use

Layer Status

- The County Planning and Parks Department will be responsible for updating the planned land use according to the Multi-jurisdictional Comprehensive Plan for Ozaukee County and State Statute 66.1001.

Custodian

- Ozaukee County Planning and Parks

Maintenance

- Ozaukee County Planning and Parks

Standards

- s. 66.1001, Wis. Stats. Comprehensive planning.

Zoning

County General Zoning

Layer Status

- County general zoning is not administered by the County. Local Municipalities are responsible for their own ordinances and classifications.

Shoreland Zoning

Layer Status

- The County maintains a GIS zoning coverage which includes navigable waterways and the shoreland area (The area within the following distances from the ordinary high-water mark of navigable waters: 1,000 feet from a lake, pond or flowage; and 300 feet from a river or stream or to the landward side of the floodplain, whichever distance is greater) in the unincorporated area of the County and follow the zoning districts adopted by the County Board.

Custodian

- Ozaukee County Land and Water Management

Maintenance

- Ozaukee County Planning and Parks will edit the Shoreland Zoning mapping based on information received by the Wisconsin Department of Natural Resources and other agencies.

Standards

- Mapping of this layers is completed by using other base layer data such as parcels, hydro, contour and orthophotography.

Farmland Preservation Zoning

Layer Status

- Not administered by the County

Floodplain Zoning

Layer Status

- The County is responsible for regulating the floodplain areas. Ozaukee County requires a floodplain delineation be completed when landowners have an area of a potential floodplain. Upon identification of an amendment of a floodplain, the County is responsible to update the mapping to reflect the updated delineation.
- The County's floodplain zoning GIS data is the same as the FEMA map.
- **Letters of Maps Change** – FEMA Flood Insurance Rate Maps (FIRMs) can be changed through "Letters of Maps Change," which is comprised of a few things: Letters of Map Amendment, Letters of Map Revision, and Letters of Map Revision Based on Fill. These are documents issued by FEMA that officially remove a property and/or structure from the floodplain. They are collectively called Letters of Map Change. The County utilizes these LOMC in regulating floodplain areas.

Custodian

- Ozaukee County Land and Water Management

Maintenance

- Ozaukee County Land Information Office will edit the Floodplain map LOMAs as they are received and forwarded by Land and Water Management

Standards

- FEMA Standards

Airport Protection

Layer Status

- Not administered by the County

Municipal Zoning Information Maintained by the County

Layer Status

- No Municipal Zoning information administered by the County

Administrative Boundaries

Civil Division Boundaries

Layer Status

- The County maintains an accurate dataset of the civil boundaries and revises the boundaries as necessary

Custodian

- Ozaukee County Land Information Office

Maintenance

- Ozaukee County Land Information Office will update the Civil Division as annexations are recorded or notified by the local Municipalities.

Standards

- Maintained as documents are recorded at Register of Deeds Office.

School Districts

Layer Status

- **Progress toward completion/maintenance phase:** The County created an approximate school district boundary map and as we update parcel maps these district boundaries will have to be revised. The County plans to work with the school district to confirm the boundaries. This was updated for the Multi-jurisdictional Comprehensive Plan for Ozaukee County.
- **Relation to parcels:**
 - **Attributes linked to parcels:** The School District name is included in the tax assessment roll and linked to the parcels via the parcel ID number.

Custodian

- Ozaukee County Land Information Office

Maintenance

- Ozaukee County Land Information Office will modify the school district boundaries as notifications from the Department of Public Instruction or other County Departments are received

Standards

- unknown

Election Boundaries

Layer Status

- The County created approximate Supervisory districts and voting wards during the Redistricting process of 2021 and as parcel maps are updated these district boundaries will have to be revised.

Custodian

- Ozaukee County Clerk's Office

Maintenance

- Ozaukee County Land Information Office worked with local municipalities and County departments during the redistricting process in 2021. Corrections will be completed as we are notified.

Standards

- Maintained during Redistricting, resolutions and ordinances

Utility Districts

Layer Status

- Utilities are responsible for creating their own data set; however, the County will make our base map data available to utilities, sanitary districts, etc. Ozaukee County does have formal agreements with We-Energies, American Transmission Company (ATC) and Milwaukee Metropolitan Sewage District (MMSD) for data sharing.

Custodian

- Ozaukee County Land Information Office

Maintenance

- Ozaukee County Land Information Office will add the static dataset to the central repository when it is received.

Standards

- Maintained by recorded documents

Emergency Service Boundary – Law/Fire/EMS

Layer Status

- **Law Enforcement:** Complete but will be modified as we move forward with QA/QC for the Wisconsin GIS NG911 Data Standard.
- **Fire:** Complete but will be modified as we move forward with QA/QC for the Wisconsin GIS NG911 Data Standard.
- **EMS:** Complete but will be modified as we move forward with QA/QC for the Wisconsin GIS NG911 Data Standard.

Custodian

- Ozaukee County Sheriff's Department

Maintenance

- Ozaukee County Land Information Office

Standards

- Wisconsin GIS NG9-1-1 Data Standard (Emergency Service Boundary)

Public Safety Answering Points (PSAP) Boundary

Layer Status

- **PSAP Boundary:** Complete but will be modified as we move forward with QA/QC for the Wisconsin GIS NG911 Data Standard.

Custodian

- Ozaukee County Sheriff's Department

Maintenance

- Ozaukee County Land Information Office

Standards

- Wisconsin GIS NG9-1-1 Data Standard (PSAP Boundary)

Provisioning Boundary

Layer Status

- Ozaukee County's provisioning boundary is the County Boundary and is complete.

Custodian

- Ozaukee County Sheriff's Department

Maintenance

- Ozaukee County Land Information Office

Standards

- Wisconsin GIS NG9-1-1 Data Standard (Provisioning Boundary)

Other Public Safety

e.g., Healthcare Facilities

Layer Status

- Hospitals, Clinics, Elderly Facilities, Police and Fire departments, and ambulance locations are mapped.

Custodian

- Ozaukee County Land Information Office

Maintenance

- Ozaukee County Land Information Office

Standards

- Maintained by recorded documents, records and orthophotography

Lake Districts

Layer Status

- Ozaukee County Does not have Lake Districts

Native American Lands

Layer Status

- Ozaukee County does not have Native American Lands

Other Administrative Districts

Layer Status

- The tax database and the GIS parcel map could be used to determine public administered lands and district boundaries may be developed as the need arises.
- Also, the County maintains a public and open space dataset.

Custodian

- Ozaukee County Planning and Parks

Maintenance

- Ozaukee County Land Information Office will update data layers when directed by the Planning and Parks Department.

Standards

- Maintained by recorded documents, ordinances and resolutions.

Other Layers

Hydrography Maintained by County or Value-Added

e.g., Hydrography maintained separately from DNR or value-added, such as adjusted to orthophotography; Elevation-Derived Hydrography

Layer Status

- Hydrography mapped per Orthophotography as needed. Ozaukee County has no attribute data for this dataset.
- The County also has a copy of the WIDNR Hydro Dataset which has attribute like names. The County intends to request updated datasets as they become available.

Custodian

- Ozaukee County Land and Water Management

Maintenance

- Ozaukee County Land Information Office

Standards

- USGS Elevation-Derived Hydrography Specifications

Cell Phone Towers

Layer Status

- Cell tower location is a vital component to reverse 911 and the IPAWS (Integrated Public Alert & Warning System) for wireless alerts. Ozaukee Co Sheriff & Emergency Management currently has this capability and has the approval from Wisconsin Emergency management and FEMA to issue alerts and warnings via the cellular towers that cover Ozaukee County. Ozaukee County does not currently have a data layer of cell tower locations and will be looking to develop this dataset when time allows.

Custodian

- Ozaukee County Sheriff's Department

Maintenance

- Ozaukee County Sheriff's Department

Standards

- unknown

Bridges and Culverts

Layer Status

- Ozaukee County does not have a GIS data layers for Bridges and culverts at this time.

Railroads

Layer Status

- Railway line dataset is available and is maintained as new data becomes available.

Custodian

- Ozaukee County Land Information Office

Maintenance

- Ozaukee County Land Information Office

Standards

- Maintained utilizing recorded documents, records and orthophotography

3 LAND INFORMATION SYSTEM

The WLIP seeks to enable land information systems that are both modernized and integrated. Integration entails the coordination of land records to ensure that land information can be shared, distributed, and used within and between government at all levels, the private sector, and citizens.

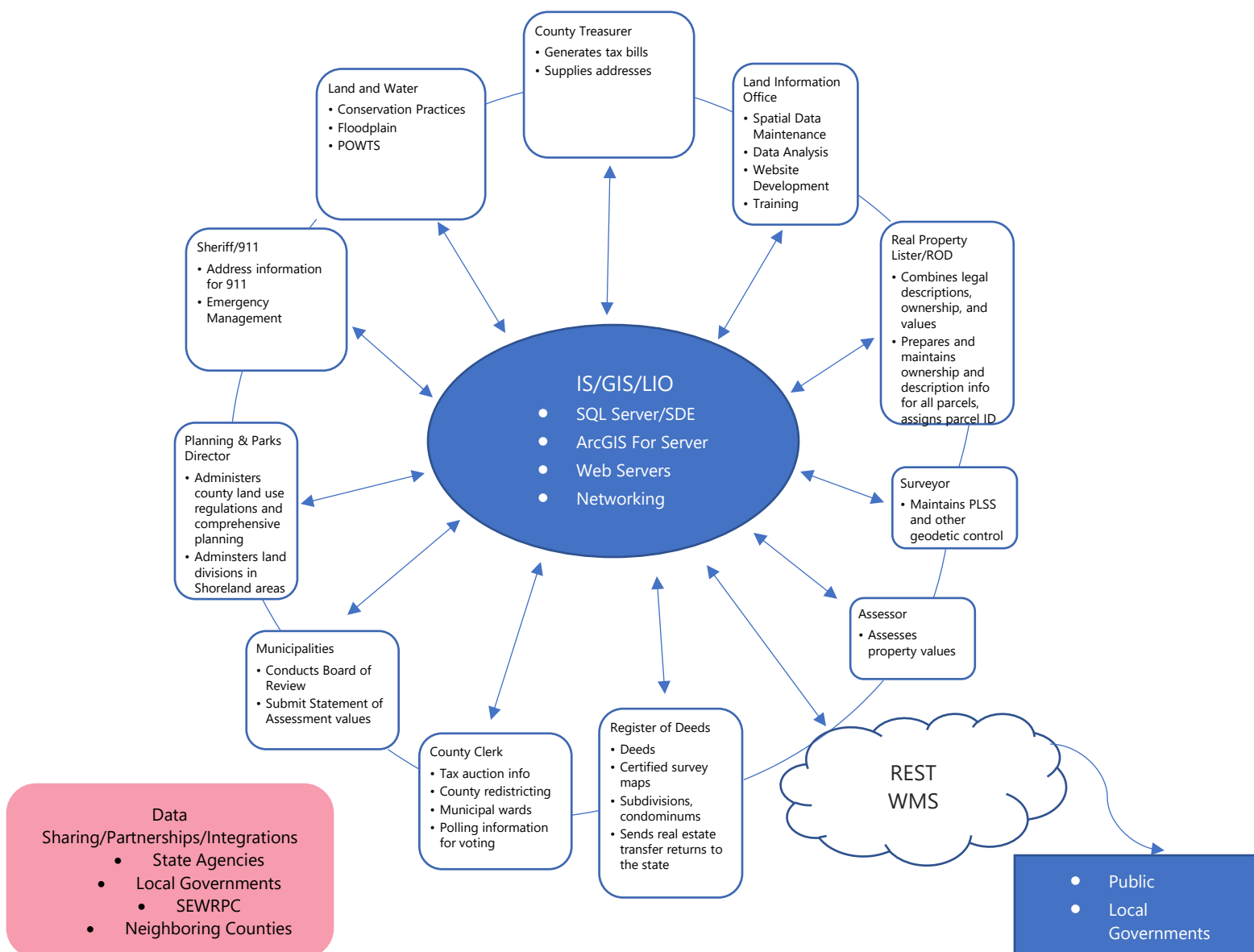
One integration requirement is listed under s. 16.967(7)(a)(1), Wis. Stats., which states that counties may apply for grants for:

The design, development, and implementation of a land information system that contains and integrates, at a minimum, property and ownership records with boundary information, including a parcel identifier referenced to the U.S. public land survey; tax and assessment information; soil surveys, if available; wetlands identified by the department of natural resources; a modern geodetic reference system; current zoning restrictions; and restrictive covenants.

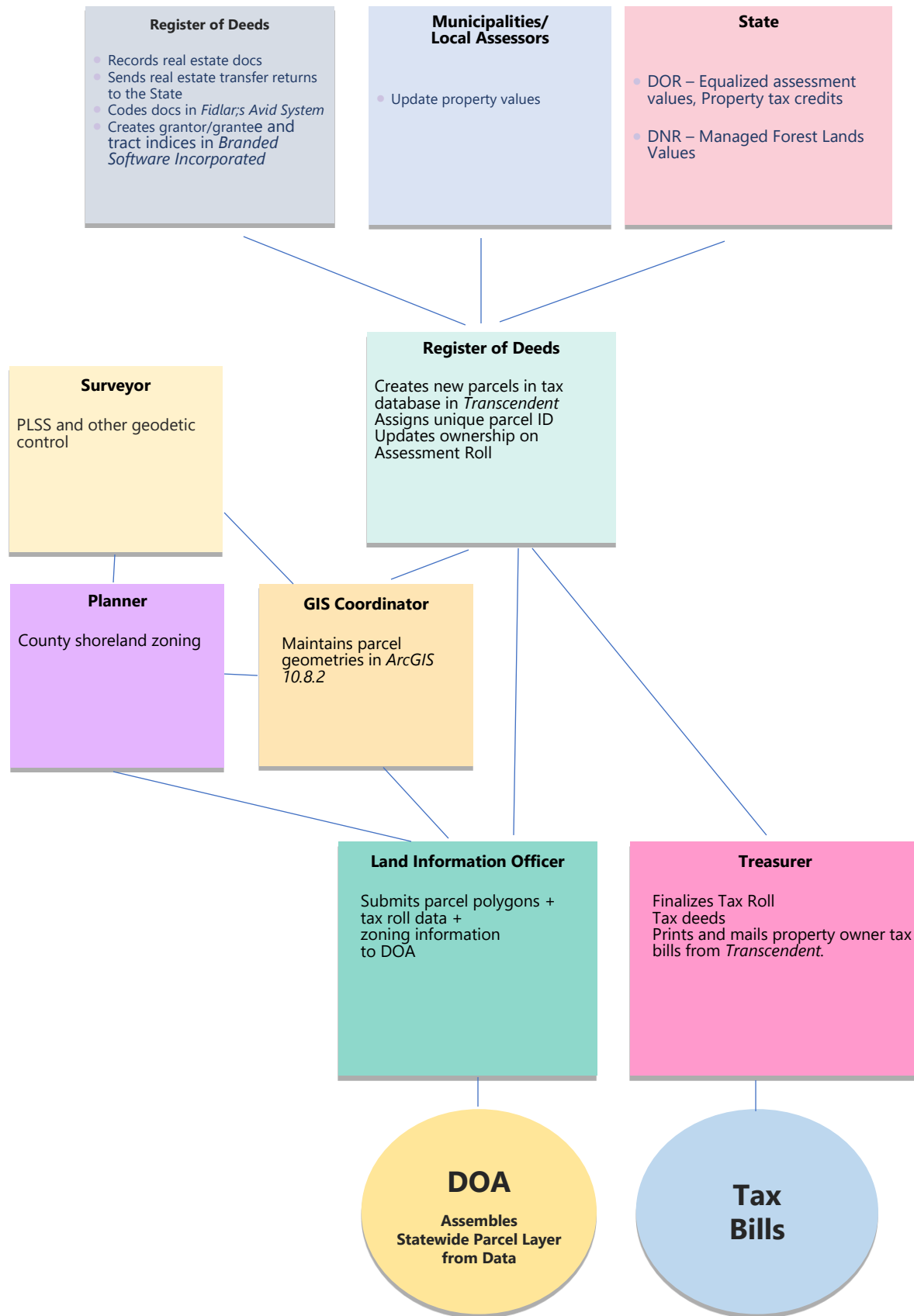
This chapter describes the design of the county land information system, with focus on how data related to land features and data describing land rights are integrated and made publicly available.

Current Land Information System

Diagram of County Land Information System



County Parcel Data Workflow Diagram



Technology Architecture and Database Design

This section refers to the hardware, software, and systems that the county uses to develop and operate computer systems and communication networks for the transmission of land information data.

Hardware

- Ozaukee County continues to maintain adequate hardware needs as they arise.

Software

- Ozaukee County utilizes ESRI software
- County does not currently use ArcGIS Pro
- County plans to upgrade to ArcGIS Pro by estimated date: June 2022

Website Development/Hosting

- Ozaukee County decided that utilizing the ArcGIS Online environment would be much more cost effective for the County. We contracted with Symbiont to develop the County Parcel GIS application as well as an application for Shoreland Zoning.

Metadata and Data Dictionary Practices

Metadata Creation

- **Metadata creation and maintenance process:** The County plans to continue maintaining the Metadata for our already created GIS layers and create Metadata for newly created layers and data sets. The County utilizes ArcCatalog to develop and provide access to geospatial metadata. The software generates metadata consistent with the FGDC Content Standard for Digital Geospatial Metadata

Metadata Software

- **Metadata software:**
 - The software does generate metadata consistent with the FGDC Content Standard for Digital Geospatial Metadata, and ISO geographic metadata standard 19115.
- **Metadata fields manually populated:** None

Metadata Policy

- **Metadata Policy:** None

Municipal Data Integration Process

- Ozaukee County discontinued the shared GIS website with the local Municipalities when we switched over to ArcGIS Online. However, the Municipalities are able to utilize the County's Rest End point for their own ArcGIS Online Applications so they have access to current updated data.

Public Access and Website Information

Public Access and Website Information (URLs)

Public Access and Website Information

GIS Web mapping Application(s) Link - URL	GIS Download Link - URL	Real Property Lister Link - URL	Register of Deeds Link - URL
https://ocgeohub-ozaukee.hub.arcgis.com/	NA	http://www.ascent.co.ozaukee.wi.us/LandRecords/PropertyListing/RealEstateTaxParcel#/Search	https://tapestry.fidlar.com/Tapestry2/LinkToTapestry.aspx?County=Ozaukee&State=WI

Municipal Website Information

Municipal Website	Municipal Website URL
City of Cedarburg GIS	https://ocgeohub-ozaukee.hub.arcgis.com/
City of Mequon	https://ocgeohub-ozaukee.hub.arcgis.com/
City of Port Washington	https://ocgeohub-ozaukee.hub.arcgis.com/
Village of Fredonia	https://ocgeohub-ozaukee.hub.arcgis.com/
Village of Grafton	https://ocgeohub-ozaukee.hub.arcgis.com/
Village of Saukville	https://village-of-saukville-gis-saukville.hub.arcgis.com/
Village of Thiensville	https://thiensville.assetally.com/

Data Sharing

Data Availability to Public

Data Sharing Policy

- The County remains willing to share our data. The County has a data disclaimer and use policy. Data is provided free of charge to all governmental units. The County has adopted a fee schedule for our data sets. Contact the Land Information for specific information pertaining to acquiring GIS data and tabular tax data.
- <http://www.co.ozaukee.wi.us/DocumentCenter/View/234/GIS-Data-Acquisition-Policy?bidId=>

Open Records Compliance

- Ozaukee County is committed to adhering to Wisconsin's Open Records laws.

Data Sharing Restrictions and Government-to-Government Data Sharing

Data Sharing Restrictions

- Ozaukee County established a Product Distribution Policy which states the data provided by the County cannot be manipulated, distributed or resold without the written permission of the Land Information Office. This form is distributed with each product request. The Ozaukee County GIS website does not allow download of the spatial or tabular data. Product requests must be submitted to the Land Information Office.

Government-to-Government Data Sharing

- The County remains willing to share our data. The County has a data disclaimer and use policy. Data is provided free of charge to all governmental units.

Training and Education

- Ozaukee County is dedicated to the continuation of Land Information and public access and realizes the importance of education and training to keep up with changes in hardware, software and technology. Ozaukee County utilizes the \$1000 Training grant towards attendance of the GIS Coordinator, GIS Technician, GIS interns or any other interested County personnel to the Wisconsin Land Information Association Annual Conference as well as regional conferences. Ozaukee County also allows staff to attend the ESRI User's Conference in San Diego to take advantage of the training on current software and insight into new technology on the horizon.

4 CURRENT & FUTURE PROJECTS

This chapter lists the current and future land information projects the county is currently undertaking or intends to pursue over its planning horizon. A project is defined as a temporary effort that is carefully planned to achieve a particular aim. Projects can be thought of as the means to achieving the county's mission for its land information system.

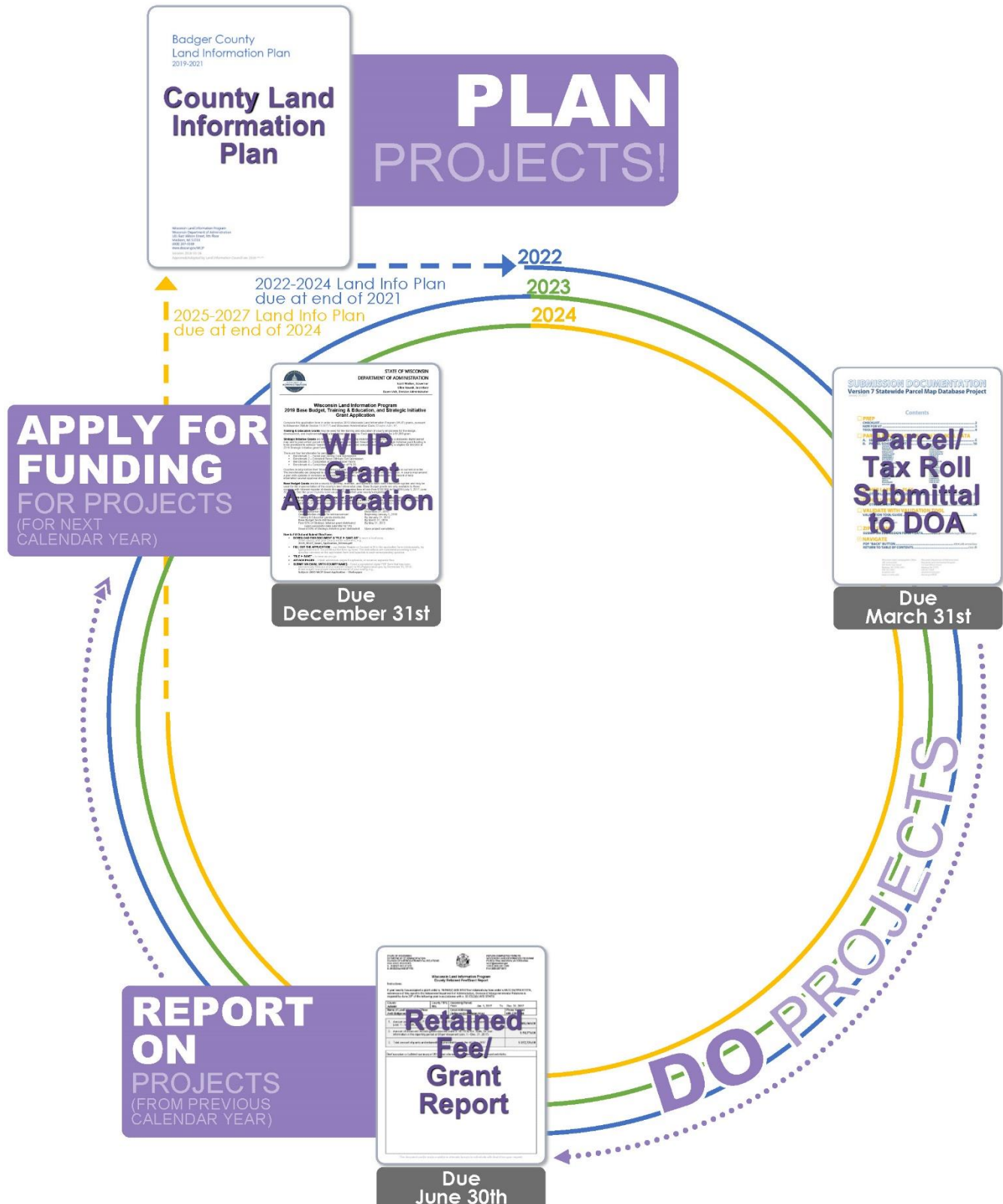


Figure 1. The WLIP Land Information Plan/Grant Project Cycle

Project Plan to Maintain Searchable Format (Benchmarks 1 & 2)

Project Description/Goal

How Searchable Format Will Be Maintained

- Ozaukee County will continue to maintain the searchable parcel layer through a script that can be scheduled and combine all datasets together. The County's parcel layer and tax assessment layer are completely separate databases and formats therefore we have contracted with an outside firm to facilitate the process. We are continually looking for solutions to make this process easier and therefor will continue to utilize grant funding to accommodate the schema requirements in order to meet Benchmarks 1 and 2.

Business Drivers

- The Project Plan to Maintain Searchable Format for Benchmarks 1 & 2 is a requirement for those counties who utilize Strategic Initiative funds for parcel/tax roll formatting to prepare the data submission to DOA.
- State of Wisconsin Act 20 Requirements
- Ozaukee County Land Information Office
- Ozaukee County Treasurer's Office
- Ozaukee County Register of Deeds

Objectives/Measure of Success

- The objective is to continue to meet the Searchable Format for Benchmarks 1 & 2 (Parcel and Zoning Data Submission, Extended Parcel Attribute Set Submission).

Project Timeframes

Timeline – Project Plan to Maintain Searchable Format		
Example		
Milestone	Duration	Date
Project start	–	January 1, 2022
Gather data	1 month	January 1-30, 2022
Contractor formats data	1 month	February 1-28, 2022
Project complete	–	March 1, 2022

Responsible Parties

- Ozaukee County Land Information Office
- Ozaukee County Treasurer's Office

Estimated Budget Information

- See table at the end of this chapter for project budget information.

Project #1: 2022 Orthophotography

Project Description/Goal

- To acquire 2022 Orthophotography along with the other SEWRPC Counties at a base resolution of 3" pixels.
- **Land Info Spending Category:** Orthoimagery

Business Drivers

- Imagery is the most used data layers in our public and internal facing applications.
- Continuous development may not be visible on imagery flown in 5-year increments

- County land information system contains some ambiguous addresses
- Used for Zoning enforcement, law enforcement, planning, assessment, emergency management, etc.

Objectives/Measure of Success

- To have a product that is of good image quality more frequently than in the past.

Project Timeframes

Timeline – Project #1 2022 Orthophotography		
Milestone	Duration	Date
Project #1 start	–	May 1, 2021
Capture of Data	1 month	Spring 2022
Receive Deliverables	4 months	Fall 2022

Responsible Parties

- Contractor to acquire and process data
- Ozaukee County Land Information Office

Project #2: Training and Education

Project Description/Goal

- Continued Training for the Ozaukee County staff and Land Information Council Members. Opportunities for education include but not limited to conferences, workshops, training courses, and presentations:
 - WLIA - Wisconsin Land Information Association
 - EWUG - ESRI Wisconsin User Group
 - ESRI Users Conference – San Diego, CA
 - SEWEUG - Southeast Wisconsin ESRI Technical User Group
 - Vendor sponsored demonstrations and training sessions
 - ESRI Training Courses – Virtual or in-person
 - WSLS – Wisconsin Society of Land Surveyors
- Land Info Spending Category: Training and Education

Business Drivers

- The ever-changing world we live in drives the need for continued education. Evolving technology provides a need to learn and understand the newest technology to provide knowledge and efficiency.

Objectives/Measure of Success

- Every year we plan to seek out opportunities to learn more about technology, policy and administration of Land Information.

Project Timeframes

- Ongoing

Responsible Parties

- Ozaukee County Staff

Estimated Budget Information

- See table at the end of this chapter.

Project #3: Web application development and Improved access to land records

Project Description/Goal

- Continue to add additional applications to suit user needs for land information

- Continue to provide one location for users to access all the applications the County has to obtain difference types of land Information.
- Land Info Spending Category: Website development/Hosting Services

Business Drivers

- 24 Hour access to land Information
- Increase productivity to Ozaukee County Staff and the public

Objectives/Measure of Success

- Addition of new applications
- Continuous access to Land Information

Project Timeframes

- Ongoing

Responsible Parties

- Ozaukee County Staff
- Contractors

Estimated Budget Information

- See table at the end of this chapter.

Project #4: Prepare for NG9-1-1

Project Description/Goal

- Upgrade 911 system and supporting data to allow for better service with NG911
- Land Info Spending Category: Other

Business Drivers

- The Ozaukee County Sheriff's department is looking to upgrade the 911 system in summer/fall 2021 and seeks a better mapping component
- Ozaukee County Road Centerline & Addressing data needs updating to meet the standards for the NG911

Objectives/Measure of Success

- 100% migration into NG911 Structure, Statewide NG911 Plan

Project Timeframes

Timeline – Project #3 Prepare for NG911		
Milestone	Duration	Date
Project #1 start	–	2020
Project Complete	1 month	Ongoing

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Responsible Parties

- Ozaukee County Land Information Office
- Ozaukee County Sheriff's Department
- Ozaukee County Emergency Management

Estimated Budget Information

- See table at the end of this chapter.

Project #5: Document Scanning and Indexing

Project Description/Goal

- Ozaukee County has about 150,000 images that have not been indexed and is not searchable in our database. Our goal is to complete 1/3 indexing per year.
- **Land Info Spending Category:** Parcel Mapping/ROD Real Estate Document Indexing and imaging

Business Drivers

- Records unsearchable for title companies and genealogy

- Decreased efficiency in searching records
- Books are falling apart, pages loose, broke binding and we wish to preserve these books

Objectives/Measure of Success

- **All images indexed and searchable

Project Timeframes

Milestone	Duration	Date
Project start	–	Jan 1, 2022
Scanning of document	12 months	Jan 1 – Dec 31, 2022
Indexing Documents previously scanned	12 months	Jan 1 – Dec 31, 2023
Index newly scanned documents	12 months	Jan 1 – Dec 31, 2024

Responsible Parties

- Register of Deeds office (10%) Contractor (90%)

Estimated Budget Information

- See table at the end of this chapter.

Estimated Budget Information (All Projects)

Estimated Budget Information

Project Title	Item	Unit Cost/Cost	Land Info Plan	Project Total
			Citations Page # or section ref.	
1) Maintain Benchmarks 1 & Searchable Format	GIS Coordinator position	5% of \$75,000 = 3,750 per yr.	Page 38	
	GIS contractor from Company TBD	\$10,000		
				\$21,250
2) 2022 Orthophotography – 3” Resolution	Contractor - SEWRPC	\$19,478	Page 12	
	Contractor (TBD) – Processing and Caching	\$3,000		
				\$22,478
3) Training and Education	ESRI Training Courses	\$3750 - 8250	Page 25	
	Conferences, - ESRI User WLIA, EWUG. etc.	\$12,000 over 3 yrs.		
				\$15,750-\$20,250
4) Web Application Development	GIS Coordinator	25% of 75000 =18,750 per yr.	Page 24	
	GIS Technician	\$25% of 62,000 =15,500 per yr.		
	Contractor (TBD)	\$25,000 - 45,000		
				\$127,750 - 147,750
5) NG 9-1-1	GIS Coordinator	25% of 75,000=18,750	Page 13	
	GIS Technician	40% of 62,000=24,800		\$130,650
6) Document Scanning and Indexing	Contractor TBD – Cost unknown	100,000	Page 11	\$100,000
GRAND TOTAL - Est				\$442,378

Note: These estimates are provided for planning purpose only, budget is subject to change. Optional items may be considered by Land Information Council but are not guaranteed projects to be included in grant application, each year will vary by availability of funds and actual expenses. Optional items not included in bolded category totals, however they are included in higher end of all project grand total.

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